



PATENT ABSTRACTS OF JAPAN

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(21) Application number: **05012554**(71) Applicant: **DAINIPPON PRINTING CO LTD**(22) Date of filing: **28.01.93**(72) Inventor: **ICHIKAWA NOBUHIKO**

**(54) ILLUMINATION DEVICE FOR LIQUID CRYSTAL
 DISPLAY DEVICE**

(57) Abstract:

PURPOSE: To enhance the utilizing efficiency of illumination light by collimating the illumination light of a liquid crystal display device and making it incident on a liquid crystal display panel or a hologram for spectrum.

CONSTITUTION: The illumination light emitted from a light source 17 is made incident on one end parts of respective optical fibers 15 and guided to the other end parts by being guided in the fibers 15. The divergent light emitted from one end part with one end part of the fiber 15 as a secondary point light source is converted to the collimated beam of light 3 by the lens surface of the micro-convex lens of a micro-convex lens array 4 and made incident on the corresponding microhologram of the hologram 2. The spectrally split light of R, G and B is passed through a liquid crystal cell and made incident on color filter cells R, G and B. Then, the bright color display is executed.

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